

60,426-268 (97P7720US03)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Oestreicher et al. ART UNIT: 3661
SERIAL NO.: 09/810,943 EXAMINER: Pipala, E.
FILED: March 16, 2001
FOR: A METHOD AND SYSTEM FOR DETERMINING WEIGHT
AND POSITION OF A VEHICLE SEAT OCCUPANT

18 Response
10/16/03
Holmes

ATTORNEY DOCKET NO: 60,426-268 (97P7720US03)

Commissioner for Patents
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RESPONSE

Dear Sir:

In response to the Office Action of July 15, 2003, Applicant requests consideration of the following arguments.

Claims 36-73 remain in the application including independent claims 36, 39, 41, 49, and 56. Claims 36-40 have been copied from U.S. Patent No. 6,039,344. Claims 56 and 57 are allowed. Claim 65 does not stand rejected under any cited prior art, thus Applicant requests an indication of the allowability of claim 65.

Claims 36-55 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Research Disclosure 39916 in view of Gagnon, and further in view of newly cited Harris.

First, Harris is non-analogous art, i.e. Harris is not relevant to Applicant's invention. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must

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either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Harris is not in the field of Applicant's endeavor and is not pertinent to any particular problem with which Applicant was concerned.

Applicant's invention is directed toward providing a more accurate weight sensing apparatus for a vehicle seat occupant. Harris is directed toward providing an accurate payload indicating system for a logging truck. Applicant uses a plurality of highly sensitive sensor assemblies attached to a vehicle seat structure that must be capable of accurately measuring very small weight loads. Further, Applicant's sensors operate in an enclosed, protected environment within a passenger compartment of a vehicle. Harris uses a heavy-duty sensor apparatus that includes sensors supported by a steel block mounted between a truck frame and a bolster for a trailer frame. These steel blocks are positioned between each trailer wheel set and the trailer frame and between each tractor wheel set and the trailer frame. Harris' sensor system operates in an exposed and unprotected environment and is subject to severe environmental conditions such as rain, snow, heat, ice, mud, etc. Thus, Harris' field of technology is directed to heavy-duty sensor systems for measuring truck loads of heavy logs that weigh several thousand pounds, while Applicant's field of technology is directed to a highly sensitive sensor system used to measure the weight of a seat occupant, which is typically less than two hundred pounds and can be as little as a few pounds.

Further, Harris does not logically commend itself to the attention of an inventor seeking to solve problems with accurately measuring seat occupant weight and determining seat occupant position. Applicant was seeking to provide a very sensitive weight measuring system that could

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accurately identify when a very small child or infant in a car seat was seated in the passenger seat so that air bag deployment could be shut off or deployed at a significantly smaller deployment force. Applicant's sensors operate in a well-protected, enclosed environment and thus design concerns related to operating in harsh external environmental conditions are not relevant. Harris was seeking to provide a heavy-duty load determining system that could be subjected to rough, unimproved roads, and which could accurately measure several thousand pounds of logs so that each trailer can be loaded to the maximum capacity without exceeding regulatory load restrictions. As discussed above, Harris was concerned with providing a heavy-duty sensor system that could measure very heavy loads yet still operate accurately in exposed and environmentally harsh conditions. Thus, the problems that Applicant was seeking to solve were very different than those of Harris.

Even assuming that Harris is analogous art, there mere fact that the prior art Research Disclosure and Gagnon structures could be modified does not make such modifications obvious unless the prior art suggests the desirability of doing so. There is no suggestion or motivation in any of the applied references that would have led one of ordinary skill in the art to modify the seat structure in the Research Disclosure in the manner proposed by the examiner. For the reasons set forth in Applicant's previous response, there is no motivation or suggestion to modify the Research Disclosure with the teachings of Gagnon. Further, there is no motivation to modify the Research Disclosure with the teachings of Harris.

While Gagnon does state that each sensor could be a load cell, strain gauge, or variable resistance pressure sensor, as previously discussed in prior responses, there is no teaching of how a strain gauge or variable resistance pressure sensor would be mounted within the seat structure

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to generate signals. Harris also does not disclose, suggest, or teach how to incorporate a strain gauge and associated deflectable portion within a seat assembly.

Harris teaches the use of sensor assemblies positioned above the rear wheel assemblies of a trailer at 20 and 21, and positioned above the tractor wheel assemblies at 22 and 23. An elongated beam 14 connects the tractor and trailer wheels. A bolster assembly 30 includes a front log support frame 31 and the tractor includes a main frame member 32. A steel block 40 is mounted between the main frame 32 and the log support frame 31 above each tractor wheel at 22 and 23. A similar arrangement exists at the rear trailer wheels at 20 and 21. The steel blocks 40 include strain gages that are used to measure the weight of the logs. None of this mainframe tractor or trailer bolster structure is similar or comparable to a vehicle seat assembly. Thus, Harris does not include any teachings that are relevant to mounting a highly sensitive sensor assembly in a vehicle seat or that would motivate an inventor to modify the seat structure of the Research Disclosure as argued by the examiner.

Any suggestion to modify the Research Disclosure system in the manner proposed by the examiner is found only in the hindsight afforded one who first viewed Applicant's disclosure. This is not a proper basis of a rejection under 35 U.S.C. 103.

Finally, even assuming that Harris is analogous art and that sufficient motivation exists to make the modification, the references taken together, do not disclose, suggest, or teach all of the claimed features. Claim 41 requires a plurality of sensors each of which includes a mounting portion for attachment to a vehicle seat structure, and a deflectable portion that deflects in response to a weight force applied to the vehicle seat structure to generate a weight signal. The examiner admits that neither the Research Disclosure nor Gagnon disclose the feature of seat

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sensor assembly with the deflectable portion that deflects in response to a weight force applied to the seat structure. The examiner argues that Harris teaches this feature, however, Harris does not include any teachings that show a seat sensor that deflects in response to a weight force that is applied to a seat structure. Thus, the rejection of claims 36-55 under 35 U.S.C. 103(a) based on the combination of the Research Disclosure as modified by Gagnon and Harris is improper and should be withdrawn.

Claim 58-60 and 66-68 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Research Disclosure 39916 in view of Gagnon, and further in view of newly cited Harris, and further in view of newly cited Huss. For the reasons set forth above, Harris is non-analogous art, there is no motivation to modify the Research Disclosure with Harris, and Harris in combination with Gagnon and the Research Disclosure do not disclose, suggest, or teach the features of claims 41 or 49. Huss also does not disclose, suggest, or teach the deficiencies of Harris.

Claims 58 and 66 include the feature of a sensor interface circuit mounted to the deflectable portion that develops a pulse width modulation signal indicative of the weight applied to the corresponding sensor. The examiner relies on Huss to teach this feature, citing the abstract and Figure 2. Huss does not disclose, suggest, or teach the use of pulse width modulation indicative of weight applied to the sensor. Neither the abstract nor Figure 2 discusses, explains, or shows this feature.

Claims 59 and 67 include the feature of the sensor interface circuit with a pulse width modulation circuit and a two-stage signal amplifier for amplifying the pulse width modulation signal to a readable level. Huss teaches the use of three (3) separate amplifiers. Thus, for the reasons set forth above, the rejection of claims 58-60 and 66-68 under 35 U.S.C. 103(a) based on

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the Research Disclosure 39916 in view of Gagnon, and further in view of Harris, and further in view of Huss is improper and should be withdrawn.

Claims 61-63 and 69-73 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Research Disclosure 39916 in view of Gagnon and further in view of newly cited Harris and further in view of newly cited Mazur. For the reasons set forth above, Harris is non-analogous art, there is no motivation to modify the Research Disclosure with Harris, and Harris in combination with Gagnon and the Research Disclosure do not disclose, suggest, or teach the features of claims 41 or 49. Mazur also does not disclose, suggest, or teach the deficiencies of Harris.

First, there is no motivation or suggestion to modify the research disclosure, Gagnon, and Harris system with the teachings of Mazur as argued by the examiner. The examiner argues that it would be obvious to make the modification to "provide more accuracy of the occupant weight." The examiner has pointed to no teaching in Mazur of any particular benefit to be derived from using sampling of the weight signal. In addition, there is nothing in the Research Disclosure, which would have led one of ordinary skill in the art to believe that the Research Disclosure system was in any way deficient for the Research Disclosure system's purposes or was in need of modification. One of ordinary skill in the art would have found no reason, suggestion, or incentive to use sampling, as claimed by Applicant, other than through the luxury of hindsight of one who first viewed Applicant's disclosure. This is not the proper basis for a rejection under 35 U.S.C. 103(a).

Second, the combination does not teach all of the claimed features. For example, claims 62 and 70 include the feature of sampling the sensors approximately every thirty milliseconds.

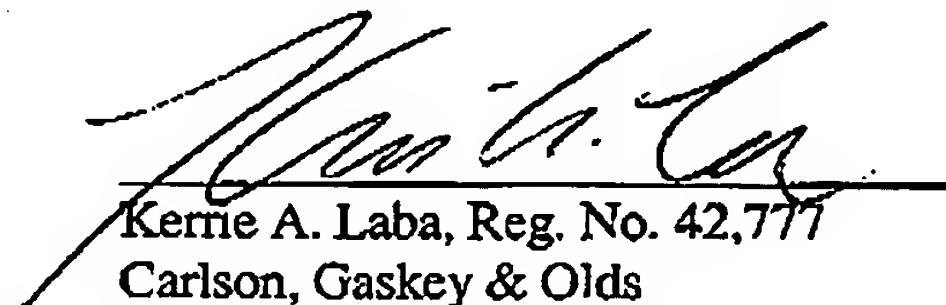
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This feature is not taught by Mazur and the examiner has not indicated where in Mazur this feature is taught. Claims 63 and 71 include the feature of determining the weight by computing a biased average of each of the sensors over time and summing all of the biased averages together to obtain a total weight. The examiner does not explain where this feature is taught in Mazur. Finally, there is no explanation of where the features of claims 72 and 73 are shown in Mazur.

For the reasons set forth above, the rejection of claims 61-63 and 69-73 under 35 U.S.C. 103(a) based on the Research Disclosure 39916 in view of Gagnon, and further in view of Harris, and further in view of Mazur is improper and should be withdrawn.

Applicant believes that all claims are in condition for allowance and respectfully requests an indication of such. It is believed that no additional fees are due, however, the Commissioner is authorized to charge Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, for any additional fees or credit the account for any overpayment.

Respectfully submitted,




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CERTIFICATE OF TRANSMISSION UNDER 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted to the United States patent and Trademark Office, fax number (703) 872-9326, on October 14, 2003.


Laura Combs

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